

7 THE RELATIONSHIPS BETWEEN BELIEF, ATTITUDE, SUBJECTIVE NORM, INTENTION, AND BEHAVIOR TOWARDS NUMBERS GAMBLING: THE MALAYSIAN CONTEXT

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Abstract :

The purpose of the study is to determine the relationship between belief, attitude, subjective norm, intention, and behavior towards numbers gambling (legal and illegal) based on the theory of reasoned action (TRA) proposed by Fishbein and Ajzen (1975). Statistical analysis on 198 responses indicates that the TRA could be used in predicting choice decision of numbers buyers by explaining 58.8 percent of the variance in the intervening variable namely intention to select the operator type. The subjective norm component had a higher predictive power than the attitudinal component. Of the two elements in the normative components, closest friend was found to be more influential. In the corresponding attitudinal components, the more influential elements (in descending order) are convenience, trusted operator, flexible games, and risk. Results of this study indicate that there are about equal number of people who prefer legal and illegal operators. Those in the younger age group are more likely to buy from the illegal operators. Those who prefer the illegal operators buy numbers more often and spend more on bets.

Key word :

Belief, Attitude, Behavior, Subjective Norm

INTRODUCTION

Gambling is considered one of the oldest business activities in the world. Gambling activities include casino operations, both land-based and on waters, horse racing, sports betting, number forecasting, lotteries and internet gambling. In Malaysia, some gambling activities are legalised and regulated, while others operate illegally. However, the most common and widespread form of gambling is the number business. Numbers gambling is more formally known as the numbers forecasting

operation. Legal operators operate under the names Magnum 4D, Sports Toto, and Pan Malaysia Pools. Despite the odds, illegal numbers businesses continue to survive locally. Although work has been conducted on illegal gambling, the focus has traditionally been on the legislative regulations and enforcement effectiveness aspect. In Malaysia and elsewhere, law enforcement agencies have been trying their best to curb gambling activities particularly the illegal ones by nabbing on the number suppliers. Little is known on the consumers' demand for numbers gambling within the Malaysian context. Although a number of studies have been conducted overseas, these studies have focused on the sociological aspects of gambling (Perdue, Long, & Allen, 1990; Kang, Long, & Perdue, 1996; Lin, 1999). Therefore, this study intends to investigate the relationship between consumers' belief, attitude, intention, and behavior towards numbers gambling as postulated in the TRA model.

LITERATURE REVIEW

The subject of gambling has been keenly studied and there are numerous literature available. One notable world-wide trend is that there has been an inclination towards legalisation of various forms of gambling which previously were considered illegal (Hing, 1998). While gambling certainly has implications for the social, psychological, and economic fabric of society, it is the latter consideration that has been a major force behind legalisation (Eadlington, 1996; Hsu, 1998). Similarly in Malaysia, there are a few legal operators that are involved in the gambling business, although this industry is highly regulated. All, except one, operate some form of numbers forecasting operation.

Briefly, the numbers forecasting operation involves taking bets on what number will be selected or occurred in some random way, usually determined through a draw. Such draws are conducted in full public view and with participation from the public and the relevant authorities. Such measures were taken in order to show that the draw was conducted in a fair and impartial manner. There are about 12 draws per calendar month.

Growing Acceptance of Gambling

Studies have shown that people's interest and acceptance of gambling as a recreational activity has changed tremendously over the years (Lin, 1999). There is growing acceptance for the gambling business among selected segments of the population (Cook & Yale, 1994; Pizam & Pokela, 1985). The proliferation of gambling locations and changing moral standards have made gambling accessible and acceptable to most people. Today, it can be observed that there is an inclination towards legalisation of various forms of gambling that were previously considered illegal (Hing, 1998). Two major factors were cited as the reasons behind the legalization of gambling. First, gambling is likely to provide economic benefits such as job creation, tax revenues, and economic development (Eadlington, 1996; Hsu, 1998; Hing, 1998). Second, by legalizing gambling, the need for illegal gambling would be eliminated or somewhat reduced (Moran, 1997).

Why People Gamble?

According to Elmore (1979), gambling can be viewed as a form of risk preference

and treated as an aspect of economic decision-making under a situation of uncertainty. Two explanations were suggested. One, a risk-averse individual will incorrectly compute the true probability of winning by underestimating the chance of a loss and overestimating the chance of winning. The second explanation involves the concept of the increasing marginal utility of money. According to Friedman and Savage (1948), a utility-maximising individual could rationally choose a small chance of winning a large amount of money over a large chance of winning a small amount of money. Friedman and Savage's (1948) argument have reversed the traditional beliefs held by economist that gambling is always irrational. Additionally, other scholars such as Rubner (1966), Pryor (1976), and Frey (1984) theorized that individuals may choose to gamble as a means of achieving an otherwise unattainable goal. In other words, gambling may be perceived as a rational course of action when a person's wish to obtain an otherwise unattainable goal is very large. Nevertheless, this line of argument is more likely to be applicable in the case of big prize lotteries and not the numbers buying business. In Malaysia, the amount of money needed to buy numbers is very little. On the average, a bet of RM1 will entail a winner to receive a reward of between RM 75 to RM 3000. The prizes payout rate is about sixty-five percent (Magnum Corporation Berhad Annual Report 1999) Given that the chances of winning among number buyers are relatively high, the act of purchasing numbers is in effect a savings method since the lump sum money received exceeds the small amount that have been spent. Given that many buyers have long-range perspective, they are likely to purchase repeatedly over a long period of time in the hope of winning (Ignatin & Smith, 1976; Ianni, 1974, Eadington, 1972). Additionally, the friendly atmosphere between number bettors tends to stimulate them to place bets (McKay, 1940). Gambling is also seen as a means of enhancing one's feelings of self-worth and control among people who feel alienated and powerless particularly those from the lower income bracket (Frey, 1984).

Illegal Numbers Operation

Just as in the case of the legal numbers operation, the illegal numbers operation involves taking

bets on what number will be selected or occur in some random manner. Usually numbers drawn by licensed operators are used by the illegal operators to determine the winners as well. In essence, the two operations run parallel to each other. Therefore, to a certain extent, there are similarities between professional counterfeiters and illegal number operators. The bets are usually small, therefore, to make a profit, illegal operators must have a big volume of business. The illegal bettor must have easy access to numbers sellers or agents in public places. Such agents or commonly known as "bookie" will visit house to house to collect bets. Placing bets over the telephone is also a common practice. Provision shops, coffee or tea houses, and shopping complexes are popular venues for such gambling activities. These bets must be collected before the draw.

Unlike legal gaming outlets, which collect bets for their specific draws, illegal bookies collect simultaneous bets for all the popular draws, the 3 and 4D of all the legal operators. Thus, illegal bookies offer convenience (Rubner, 1966), and flexibility in type of games offered. Besides there is no fixed quantity of bets allowed as in the case of legal operators. Illegal bookies pay slightly more prize money (by way of giving discounts on bets placed), however, players risk losing their winnings as illegal operators are known to run out of funds and players have no recourse to legal actions.

Although one of the justifications for legalising gambling was to reduce illegal gambling, past experiences in the United States did not lend support to this relationship. As reported by the National Gambling Impact Study Commission (2000), in a series of studies conducted for a period of 10 years (1988-1997) in the United States, almost 60 percent of the adult population reported their participation in some form of illegal gambling. Among the reasons cited that led to the survival of illegal gambling were better odds of winning, the availability of credit, and that winnings were tax-free (Reuter & Rubenstein, 1983; Moran, 1997). In Malaysia, many punters have been placing their bets with illegal operators because they pay out some 5% more in prize money than the legal operators, plus the convenience they offer since consumers can place their bets via phone, and credit is extended to regular customers. (The Star, 2002)

Laws Governing Illegal Gambling

In Malaysia, the gambling industry is highly regulated with various laws enacted including the Common Gaming House Act 1953 (Act 289), and the Pool Betting Act 1967 (Act 384). Under the act, an operator of an illegal gambling operation shall be liable to a fine of between RM 20,000 and RM 200,000 and a maximum imprisonment term of three years. Buyers from illegal operators are also liable to a maximum fine of RM 5,000 and an imprisonment term of up to six months. Under the definition of the act, a single ticket found on a person is sufficient for conviction. Therefore, it can be concluded that the risks undertaken by buyers from illegal operators are very high.

Problems Associated with Gambling

From the review of literature on the subject of gambling, one will certainly notice that gambling is certainly unlike other forms of recreation and leisure activities. While legal gambling has certainly increased government's revenue and economic development, there are certain externalities associated with gambling that we do not see in other businesses.

According to Moran (1997), in the early 1950's, the prevailing assumption was that gambling was a predominantly lower class activity. Hence, it was assumed that gambling contributed to poverty, crime, family disruption, drug and alcohol abuse. However, during the next two decades, sociological researchers has shown that people of the lower class category was no more likely to be involved in gambling than other segments of the population. In 1976, a study undertaken by the Commission on the Review of Gambling found a positive relationship between gambling and social ills, but was unable to conclude whether these problems were causes or effects of gambling. This finding, however, has reversed the earlier assumption that gambling caused or created serious social ills, which inadvertently led to the increase in legalisation of the industry.

It is certainly not possible to deal at length with all the social issues related to gambling in this study. However, it is important to note that one pertinent issue is problem-gambling, defined as "the situation when a person's gambling activity gives rise to harm to the individual player, and/or to his family, and may extend

to the community" (Australian Institute for Gambling Research, 1997). The Australian Institute for Gambling Research (1996) has estimated that about 1.1 percent of the population are problem-gamblers. Similar studies in the United States also shows that there are between 1.4 percent to 2.8 percent of problem gamblers (Brindley, 1999). However, Fisher and Griffiths (1995) pointed out that, in most countries, gambling machines are the predominant activity of problem-gamblers. A research in Australia estimated that up to 15 percent of regular machine gamblers may have significant personal, financial and family problems arising from their gambling (Dickerson, 1996). While it has been recognised that problem gambling does exist, the contributory role played by numbers gambling has been inconclusive.

THEORETICAL FRAMEWORK AND HYPOTHESES

Theory of Reasoned Action

The theory of reasoned action proposes that behaviour results from the formation of specific intentions to behave (Ajzen & Fishbein, 1980). According to the TRA model, two major factors determine behavioural intentions namely: first, a person's attitude toward the behavior, and second, the subjective norm.

Algebraically, the TRA model (Fishbein & Ajzen, 1975) is expressed as :

$$B \sim I = (A_b) w_1 + (SN) w_2 \dots\dots\dots (E_1)$$

Where:

- B = behaviour
- I = the person's intention to perform the behaviour
- A_b = the person's attitude toward performing behaviour
- SN = subjective norm
- w₁ and w₂ = empirically determined weights

Attitude toward the behavior refers to the person's judgment that performing the behavior is good or bad. The subjective norm reflects the person's perception of social pressures put on him/her to perform or not to perform the behavior in question. According to the theory, attitudes are a function of beliefs. In general, a person who believes

that performing a given behavior will lead to positive outcomes will hold a favourable attitude toward performing the behavior. Similarly, a person who believes that performing a given behavior will lead to negative outcomes will hold an unfavourable attitude toward performing the behavior. According to the TRA model, attitude toward the behavior is determined by the beliefs that the behavior leads to certain outcomes, and by the person's evaluation of these outcomes.

Algebraically, it can be written as

$$A_B = \sum b_i e_i, \text{ for } i = 1 \text{ to } n. \quad (E_2)$$

Where:

- A_B = attitude toward performing the behaviour
- b_i = the person's belief that performing the behaviour will result in outcome i
- e_i = the person's evaluation of outcome i
- n = the number of beliefs

Additionally, subjective norms are a function of normative beliefs. In other words, a person who believes that most referents with whom he/she is motivated to comply think he/she should perform the behavior will perceive social pressure to do so.

Conversely, a person who believes that most referent with whom he/she is motivated to comply think he/she should not perform the behavior will perceive social pressure to avoid performing the behavior. According to the TRA model, the general subjective norm is determined by the perceived expectation specific referent individuals or groups, and by the person's motivation to comply with those expectation

The equation for obtaining the subjective norm is:

$$SN = \sum NB_j MC_j, \text{ for } j = 1 \text{ to } n. \quad (E_3)$$

Where:

- SN = subjective norm
- NB_j = the normative belief that a referent group j thinks that the person should should not perform the behaviour.
- MC_j = the motivation to comply with the influence of referent j .
- n = the number of relevant reference group of individuals.

The TRA model developed by Ajzen and Fishbein (1981) was adopted in this investigation as shown in Figure

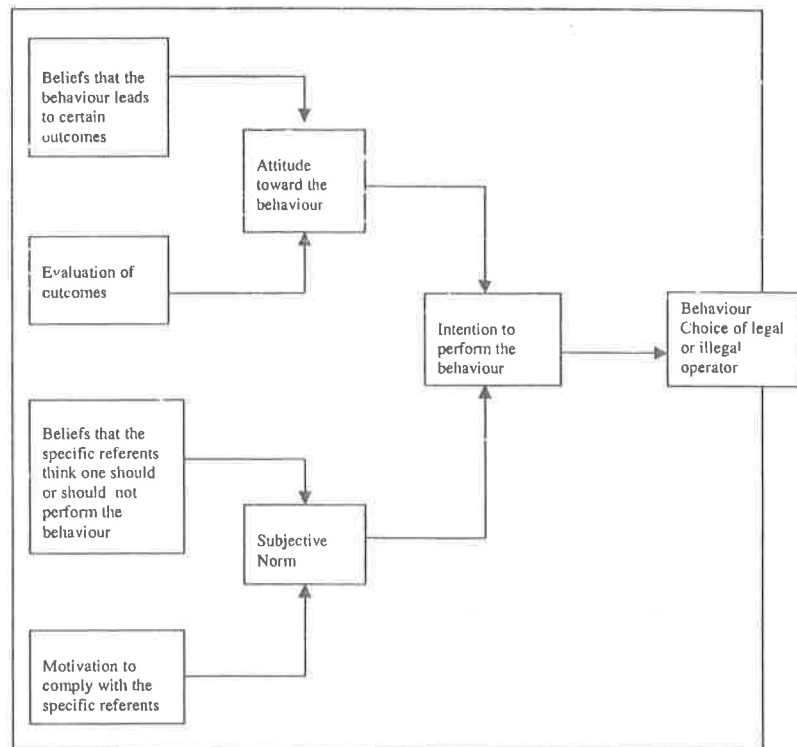


Figure 1: Theoretical Framework

Hence, the hypotheses conjectured in this study are as follows:

- H₁: The intention to buy numbers (from legal or illegal operators) is influenced by a person's attitude towards the behaviour and his/her subjective norm.
- H₂: The more positive is the attitude towards the behaviour, the greater is the intention to perform the behaviour.
- H₃: The more positive is the subjective norm, the greater is the intention to perform the behaviour.
- H₄: Behavioural intention can be used to discriminate whether a person will buy numbers from licensed (legal) or unlicensed (illegal) operators.

RESEARCH METHODOLOGY

Sample and Procedure

The sample for this study consists of 200 adults above the age of 18 located in the state of Penang who have participated in buying numbers before irrespective of whether they have bought from legal or illegal operators. In determining the salient beliefs, focus interviews were conducted with 15 respondents. Eight beliefs were identified consistent to those of prior researchers that suggested that an individual is capable of attending to or processing only five to nine items of information at a time (Miller, 1956; Woodworth & Schlosberg, 1954; Mandler, 1967, Fishbein & Ajzen, 1975). A pre-test instrument was developed based on the 8 salient beliefs and 2 referents (family and closest friend). The questionnaire developed included items measuring choice behaviour, beliefs, evaluative outcomes, normative beliefs, motivation to comply, subjective norm, and intention.

Measurement

The eight salient beliefs identified via focus interviews were measured on a 5-point scale ranging from (1) "strongly disagree" to (5) "strongly agree". Sample items include statements like "I buy numbers from licensed operators because it is easy to locate the place/agent". This statement relates to the

availability and convenience factor that influence buyer's decision to purchase the numbers. Similar statements were developed to measure salient beliefs relating to low price and discounts given for bets, perceived risk, trusted operator, credit terms given, flexibility in amounts, flexibility in games, and luck. This process was again repeated by substituting the term licensed operators for unlicensed operators. The evaluative component corresponding to the salient beliefs was measured by asking the respondent to evaluate the consequences of each belief item on a 5-point scale ranging from (1) "least important" to (5) "very important". Sample items include statements such as "Buying numbers that is easy to find and purchase is:". This statement is then repeated for the other seven salient beliefs. Respondents were asked to express their attitude towards buying numbers from either legal or illegal operators using a 5-point scale. Respondents were asked to indicate their normative beliefs with regard to each referent group: "My family thinks it is acceptable to buy numbers from legal operators" using a 5-point response format ranging from (1) "strongly disagree" to (5) "strongly agree". Motivation to comply with each referent was measured on a 5-point scale. Sample items include statements like "Typically, I like to do what my family suggest". Responses were measured from (1) "strongly disagree" to (5) "strongly agree". The measurement for the subjective norm was derived from a 1-item instrument developed by Fishbein and Ajzen's (1975). This statement is as follows: "Most people who are important to me think I should/should not buy numbers from legal operators". This process was again repeated by substituting the term licensed operators for unlicensed operators. The dependent variable in this study is behavioural intention measured using one item. The statement involved is as follows: "All things considered, what are the chances you will buy numbers from licensed operators?" Responses were measured on a 5-point scale ranging from (1) "very unlikely" to (5) "very likely". The same question will be asked for the case of unlicensed operators. To enable the respondents to understand the questions asked, the survey instrument was translated into the Chinese language.

RESULTS

Sample Profile

Of the 400 questionnaires distributed, 274 responses were received. Of this amount, only 198 useable ones were analysed representing a response rate of 49 percent. The demographic profile of respondents can be observed from Table 1.

It can be seen from Table 1 that a majority of the respondents were males (62.7%) with the remaining (37.3%) being females. In terms of age, 93.4% of the respondents were within the 18 years to

55 year of age. A majority of the respondents (76.5%) were married. In terms of race, a majority (86.1%) of the respondents were Chinese. More than half (54.5%) of the sample comprised of white-collar employees. In terms of monthly income, a majority (65.2%) of the respondents earn a monthly income of RM2500 and below.

Reliability Assessment

The reliabilities of the instruments used in the study as shown in Table 2 are considered acceptable with Cronbach alphas ranging from 0.65 to 0.92.

Table 1: Sample Profile

Variables	Frequency	Percent (%)
GENDER		
Male	104	62.7
Female	62	37.3
AGE		
18 to 35	82	49.4
36 to 55	73	44.0
Above 55	11	6.6
MARITAL STATUS		
Single	39	23.5
Married	127	76.5
RACE		
Malay	5	3.00
Chinese	143	86.1
Indian	16	9.6
Others	2	1.2
OCCUPATION		
Housewife/ unemployed	19	11.6
Self Employed	20	13.1
White Collar	93	54.5
Blue Collar	34	20.7
EDUCATIONAL LEVEL		
Primary	27	16.3
Secondary	97	58.4
Diploma or Higher	42	25.3
MONTHLY INCOME		
Below RM1,000	33	19.4
RM1,001 to RM2,500	76	45.8
RM2,501 to RM5,000	48	28.9
Above RM5,000	9	5.4

Table 2: Reliability Coefficients

Descriptions	Total No. of Items	Cronbach Alpha
Beliefs - Legal	8	0.65
Beliefs- Illegal	8	0.70
Differential Beliefs (Illegal-Legal)	8	0.73
Evaluation of Outcomes	8	0.75
Normative Beliefs - Legal	2	0.86
Normative Beliefs - Illegal	2	0.92
Differential Normative Beliefs (Illegal-Legal)	2	0.91
Motivation to Comply	2	0.74

In order to demonstrate that attitude toward behaviour and subjective norm are the predictors of intention of choice decision on buying of numbers from legal or illegal operators, the independent assessment of intention, attitude toward behaviour and subjective norm were obtained for legal and illegal operators. Given that the primary concern of this study is to understand the choice decision between the two types of operators, the differential scores for attitudes, subjective norms and intentions were computed. The differential scores were obtained by subtracting the scores for legal operators from that of the illegal ones. Subsequently, correlation and multiple regression analysis were conducted.

Table 3 summarizes the results of the regression analysis carried out to test the first hypothesis of the study.

Table 3: Results of Multiple Regression for Intention vs. Attitude and Subjective Norm

Independent Variable	Std Beta
Attitude	0.394**
Subjective Norm	0.564**
R ²	0.58
Adj R ²	0.575
F Value	112.71**
Durbin Watson	2.00

p < 0.01

The R-square value of 0.58 indicates that 58% of the variance in the dependent variable (differential intention) can be explained by the two independent variables (attitude and subjective norm). This finding provided support for the first hypothesis of this research. In terms of the relative predictive power of the two independent variables, namely, attitudes towards the behaviour and subjective norm on the choice decision to buy numbers from either the legal or illegal operators, it can be observed that the beta weight for subjective norm was larger (0.564) compared to that of attitude (0.394). This suggests that perceived expectations of significant others or reference groups and peer motivation plays a more dominant role in influencing choice decision toward numbers gambling as opposed to a person's personal

beliefs system.

Additionally, the results obtained from Table 3 provided evidence to support the second hypothesis of the study. The standardised beta coefficient for the attitude component is positive (0.394). This value implies that the more positive is the attitude, the greater is the intention to perform the behaviour. Similarly, the results obtained from Table 3 provided evidence to support hypothesis 3 of this investigation. The standardised beta coefficient for the subjective norm component is again positive (0.564) which implies that the more positive is the subjective norm, the greater is the intention to perform the behaviour.

Discriminant analysis was undertaken to test whether behavioural intention can be discriminated in accordance to whether a person will buy numbers from licensed (legal) or unlicensed (illegal) operators. Respondents' choice decisions were separated into 2 groups, namely group 1 (legal operators) and group 2 (illegal operators). Data was split using a 65-35 ratio for analysis and validation. This is done to test the internal validity of the model and assess its predictive accuracy. The summary results obtained from the discriminant analysis are depicted in Table 4 and Table 5.

Table 4: Hit Ratio For Cases Selected In The Analysis

Actual Group	No. of Cases	Predicted Group Membership	
		Legal	Illegal
Legal	60	58 (96.7)	2 (3.3)
Illegal	52	17 (32.7)	35 (67.3)

Percentage of "grouped" cases correctly classified: 83.0%

Table 5: Hit Ratio For Cases Not Selected In The Analysis

Actual Group	No. of Cases	Predicted Group Membership	
		Legal	Illegal
Legal	29	27 (93.1)	2 (6.9)
Illegal	25	87 (32.0)	17 (68.0)

Percentage of "grouped" cases correctly classified: 81.5%

As can be observed from Table 4 and Table 5, a discriminant model is said to exist given that the chi-square value of 67.50 is significant (p = 0.000). The hit ratio was 83% (analysis sample) and 81.5% (holdout sample). This indicates that by measuring intention, we can classify respondents according to their choice decision. The maximum chance criterion

equals 53.7% and the proportional chance criterion equals 50.27%. According to Hair et al. (1998), since the hit ratio was higher than both the maximum chance criterion and the chance criterion by more than 25 percent ($1.25 \times 53.70\% = 67.12\%$), the model is said to have acceptable level of predictive accuracy. Press Q equals 21.41 which is greater than $Q = 6.635$ (c^2 , $df=1$, $\alpha=0.01$). Thus, it can be concluded that the predictions are significantly better than chance. Additionally, since Press Q is greater than 6.635, the predictive validity is significant at the 0.01 level. The discriminant function has a canonical squared correlation equal to 0.46 and is statistically significant with Wilks' Lambda=0.54, ($p=0.000$) indicating that 46% of the variance in choice can be explained by the discriminant function. In sum, the findings obtained from the discriminant analysis indicate that intention is a precursor to performing a particular behaviour. This result provides support for hypothesis 4 of the current investigation. This finding is consistent with those of previous researchers (for instance, Quah, 2000; Hajemi, 2000; Fishbein & Coombs, 1974).

Comparison of Behavioural Beliefs Between Respondents Who Intend to Buy from Legal Operators and Those Who Intend to Buy from Illegal Operators.

A t-test was carried out to test the difference between the eight salient beliefs. The results of the test can be observed from Table 7.

From Table 7, it can be seen that each belief was significantly different from the other, except for convenience. The legal number buyers had high means only on the beliefs pertaining to risk and trusted operator whereas the illegal number buyers had high means for low price, credit given, flexible bets, flexible games, and luck. The two groups did not differ in the beliefs regarding convenience since both had similar beliefs. Nevertheless, based on the mean values, the three dominant factors for legal number buyers are risk, trusted operator and convenience. For the illegal number buyers, flexible games, low price, and flexible bets seem to be the dominant factors. Thus, it can be concluded that the two groups of number buyers are different. Specifically, legal number buyers are more

Table 6: Comparison Of Goodness Of Measure

Measure	Value	Hit Ratio for Holdout Sample
Maximum Chance	53.70 %	81.5 %
Proportional Chance	50.27 %	81.5 %
Comparison with Hair et al. (1998). 25% higher than chance	67.12%	81.5 %
Press Q Table Value	6.635	
Calculated Value	21.41**	

** significant at $p = 0.01$

Table 7: Summary of Analysis of Behavioural Beliefs

Items	Legal Operator	Illegal Operator	Sig.
Low price	1.86 (5)	3.73 (2)	0.000
Convenience	3.42 (3)	3.46 (4)	0.735
Risk	4.20 (1)	2.22 (8)	0.000
Trusted Operator	3.96 (2)	2.98 (6)	0.000
Credit Given	1.72 (8)	3.43 (5)	0.000
Flexible Bets	3.09 (4)	3.56 (3)	0.000
Flexible Games	2.63 (6)	3.87 (1)	0.000
Luck	2.24 (7)	2.64 (7)	0.000

Note: Numbers in parentheses are summary ranks of each attribute within each group.

concerned with risk and trust whereas the illegal number buyers are more concerned with flexible games and bets. These findings are consistent with those of prior scholars (for example, McKay, 1940; Rubner, 1966; Reuter & Rubenstein, 1983; Moran, 1997).

Comparison of Outcomes Evaluation Between Respondents Who Intend to Buy from Legal Operators and Those Who Intend to Buy from Illegal Operators.

Analysis of the outcomes evaluation was conducted by running a t-test. The results are tabulated in Table 8.

From Table 8, it can be observed that there were significant differences with regards to low price, convenience, risk, credit given, flexible bets and flexible games. As for trusted operator and luck, both groups did not differ significantly. The three most highly ranked factors in terms of importance placed by buyers of legal numbers are trusted operator, risk and convenience. Similarly, the buyers of illegal numbers also ranked trusted operator as the most important

followed by flexible games, and convenience. Illegal number operators offer a much more flexible gaming scheme and flexible betting system as opposed to the legal number operators who offer a fixed game and fixed bets scheme since they are governed by legislation.

Comparison of Normative Beliefs Between Respondents Who Intend to Buy from Legal Operators and Those Who Intend to Buy from Illegal Operators.

To have a better understanding of the normative elements on the choice intention of numbers buyers, a t-test was undertaken to test for significant differences between the two groups. The results are depicted in Table 9.

As shown in Table 9, there are significant differences in the scores obtained by the two groups. The dominant influence on normative beliefs came from closest friend. This finding is consistent with the argument made by McKay (1940) that the urge to gamble is fostered by the friendly atmosphere that prevails amongst bettors.

Table 8: Summary of Outcomes Evaluation

Items	Legal Operator	Illegal Operator	Sig.
Low price	3.18 (7)	3.80 (5)	0.001
Convenience	3.88 (3)	4.17 (3)	0.027
Risk	4.17 (2)	3.78 (6)	0.006
Trusted Operator	4.28 (1)	4.38 (1)	0.408
Credit Given	2.75 (8)	3.64 (7)	0.000
Flexible Bets	3.53 (5)	3.92 (4)	0.018
Flexible Games	3.72 (4)	4.25 (2)	0.000
Luck	3.22 (6)	3.43 (8)	0.315

Note: Numbers in parentheses are summary ranks of each attribute within each group

Table 9: Analysis of Normative Beliefs

Items	Legal Operator	Illegal Operator	Sig.
Family	3.64 (2)	3.20 (2)	0.000
Friends	3.69 (1)	3.21 (1)	0.000

Note: Numbers in parentheses are summary ranks of each attribute within each group

Comparison of Motivation to Comply Between Respondents Who Intend to Buy from Legal Operators and Those Who Intend to Buy from Illegal Operators.

To have a better understanding of the motivation to comply on the choice intention of numbers buyers, another t-test was carried out as shown in Table 10.

Table 10: Analysis of Motivation to Comply

Items	Legal Operator	Illegal Operator	Sig.
Family	3.09 (1)	3.08 (1)	0.936
Friends	2.92 (2)	2.95 (2)	0.831

Note: Numbers in parentheses are summary ranks of each attribute within each group

As can be observed from Table 10, there were no significant differences in the scores obtained by the two groups. The motivation to comply is geared more towards one's own family members compared to one's friends. This indicates that the motivation to comply due to family members are more important than friends even though friends are believed to be more important in influencing one's decision. This finding may be attributed to the relationship-orientated nature of Malaysians where family members are very dominant in influencing one's decisions.

Relationship between Demographic Variables and Choice Decision.

To study whether choice decision is dependent on the personal characteristics of the individuals, a chi-square test was conducted for all the demographic variables. Only one variable was found to be significant, age ($\chi^2=15.33, p<0.01$). It was found that for respondents below 35 years of age, a higher proportion (47.6% versus 52.4%) chose to buy from the illegal operators. In contrast, respondents who are 36 to 55 years of age prefer to buy from the legal operators (67.1% versus 32.9%). In contrast, those from the older age group of above 55 years also prefer to buy from illegal number operators (90.9% versus 9.1%). One possible explanation for this result may be due to the fact that the respondents from the middle age group are more risk-averse and thus, more likely to adhere to the law. On the other hand, those who are relatively younger (18-35 years) and older (above 55

years) may as a result of their financial constraint opt for illegal number operators because of the flexible bets, credit availability, low price, and as ease of purchase.

DISCUSSION

The primary aim of this study is to explore how

the TRA could facilitate in predicting choice decision of numbers buyers for either the legal or illegal operators. The TRA model suggested that the best predictor of the behaviour is the intention to act. Since we are interested in understanding the underlying factors that lead a consumer to act in a particular situation (preference for illegal numbers operator), we have to look behind intention and consider the factors that led to intention, that is, attitude towards the behaviour and the subjective norm.

In this study, it was shown that the TRA model could explain 58.8 percent of the variance in the choice intention of numbers gambling. Statistically the model was significant and the result indicated that the TRA is a useful model for use in predicting choice decision of numbers gamblers. This is consistent with other studies using the TRA model (Quah, 2000; Hajem, 2000; Miniard, Obermiller & Page, 1982; Ajzen & Fishbein, 1969).

From the discriminant analysis conducted on intention and choice decision, it can be established that intention, indeed was a precursor to behaviour. The discriminant model achieved a high level of predictive accuracy since the hit ratio of 81.5% was much higher than the 1.25 times the proportion of chance criteria (62.84%), in accordance with Hair et al. (1998)'s guideline. In other words, by measuring intention, we can classify respondents' according to their choice decision. In sum, the present study indicates that intention to act is an intervening variable between attitude and behaviour (Fishbein & Ajzen, 1975;

A critical finding of this study is that the beta weight for subjective norm component is larger than the beta weight for the attitudinal component. This illustrates that the subjective norm component is a better predictor of choice decision among numbers gamblers. Fishbein and Ajzen (1975) added that the relative weights of the attitude and subjective norm components varies according to the behaviour, individual, and situation involved. For instance, in certain situations, the weights of the attitude component may be higher than the subjective norm component whereas in another situation, the opposite may be true. In analysing the normative beliefs of the sample in the present investigation, closest friend was found to be the dominant referent. This finding is not surprising given that earlier scholars, for example, Mckay (1940), has discovered that the friendly atmosphere and positive social interaction prevalent among numbers gamblers are likely to stimulate people to emulate their friends by engaging in numbers buying in the hope of gaining higher returns. In Malaysia, numbers gambling activities are likely to occur in places such as at the coffee shops, grocery stores, and even workplaces where people have the opportunity to interact and socialize. On the other hand, family members were found to be more important in influencing one's motivation to comply. This finding is consistent with Abdullah's (1992) argument that for Malaysians, the family is the earliest and strongest source of values. Similarly, given that Malaysians live in a web of kinship ties (Abdullah, 1992), it is highly likely that the family particularly the significant elders with whom the individual has the greatest contact during his/her formative years would have a profound effect on the individual's core values such as compliance.

In the statistical analysis, the dominant beliefs held by respondents (in descending order) are as follows: flexible games, low price, flexible bets, convenience, credit given, trusted operator, luck, and risk. Specifically, flexible games, low price, and flexible bets were the three most important criteria in influencing one's decision to engage in buying numbers from illegal operators. This finding is in line with earlier researchers (for example, Mckay, 1940; Rubner, 1966; Reuter & Rubenstein, 1983; Moran, 1997) who noted that the thriving of illegal numbers

gambling was due to factors associated with convenience, availability of credit, better odds of winning, and that winnings are tax-free. One plausible reason why respondents ranked very low for availability of credits as opposed to earlier studies may lie in the cultural beliefs of the gamblers themselves. Given that a majority of the sample consisted of the Chinese who have been known to be superstitious, getting indebted to bookies may be viewed as unfavourable.

In terms of demographic characteristics, people within the age group of 35 years or younger, are more likely to participate in illegal numbers gambling. A possible explanation for this behaviour is that the younger age group are more price sensitive (since the illegal operators usually offer discounts), are less risk averse (perhaps in their short gambling career, they have not experienced operators that default on winnings), and placed smaller amounts of bets (which is not practised at the legal gambling outlets). Conversely, it can also be deduced that those who are 36 to 55 years of age, are more risk-averse. This finding is consistent with those obtained by prior researchers (for instance, Cordell, Wongtada & Kieschnick, 1996) who discovered that individuals who are within the 36 to 55 years age bracket tend to have a higher lawfulness attitude toward counterfeit purchase. Furthermore, individuals above 55 years of age also reported a larger percentage of illegal numbers buying. This can be attributed to the factor of diminished income, where people over 55 years are retirees or pensioners who have limited amount of money. Therefore, factors associated with flexible bets, low price, and flexible games are more important to them. However, it must be carefully noted that if this trend is stable over time, dire consequences will result to the legal operators. In Malaysia, about 42 % of the population lies with the younger age group of 15-39 years whereas those above 40 years old constituted about 25 %. This current data suggests that illegal numbers gambling will continue to flourish given the relatively large market.

IMPLICATIONS OF FINDINGS

TRA Model

In sum, the TRA model has been able to explain

the attitude-intention-behaviour relationship within the numbers gambling businesses. The TRA not only could predict intentions but also has the ability to explain the underlying beliefs that enhance or thwart the choice decision process. The beta weight analysis of the independent variables has also enabled us to identify the more dominant variables. For marketers to develop effective strategies, it is important to determine whether the attitude or normative component has the major influence on behavioural intentions and subsequent behaviour. As discussed earlier, the normative component was found to be more dominant than the attitude component in influencing the choice decision among numbers gamblers. Therefore, marketers of licensed gambling and perhaps the relevant authorities need to focus on the role played by the normative component (in this case, closest friend and family) in influencing one's buying behaviour.

Normative Beliefs

According to Fishbein and Ajzen (1975), normative beliefs may also be inferred from the referent's perceived attitude toward performing the behaviour. If the referent (closest friend) is perceived to have a favourable attitude toward performing the behaviour, the normative belief may be formed that the referent (closest friend) thinks the person should perform the given behaviour. In this sense, it is also important that due consideration be given to one's referent (such as closest friend) in influencing a person's attitude toward buying numbers. In other words, we need to look at the individual's salient beliefs – the attitude component.

Influential Salient Beliefs

In the earlier analysis, it was shown that the most influential beliefs were flexible games, flow price, flexible bets and convenience. The implication of this finding is both critical and crucial to the legal gambling industry. As noted earlier, the gambling industry in Malaysia is either heavily regulated or expressly prohibited. The illegal number operators offer a more flexible gaming scheme where a person can bet on 3D, 4D and TOTO all with the same operator and also they offer bettings which starts from as low as 10 cents upwards. Whereas licensed gambling outlets

operates under very strict regulations which greatly inconvenienced customers as compared to their illegal counterparts that offered many conveniences such as personal visits and accepting telephone bets. Today's world of advanced computer, wireless and telecommunication technologies, coupled with the growing popularity of the internet, will certainly offer great challenges to the numbers gambling operation. Viewed from the current Malaysian perspective, these will pose as major threats to the legal numbers forecasting operations, simply because regulators and industry are certainly not keeping up to the times. For example, cell phones usage are hitting an evolutionary phase, where new Internet-based functions are going to become more common, using both Wireless Applications Protocol (WAP) and General Packet Radio Service (GPRS), which will facilitate the electronic business or E-business. E-business will besides being convenient has the following advantages: increase global reach, easy, low cost, flexible, and improve relationships with existing and new customers through the reduction of customer response and service time. Besides, E-business is borderless, meaning firms can operate numbers gambling businesses either legal or illegal, and have Malaysian as customers. Given the advantages associated with E-business, innovations in the gambling industry particularly among the illegal operators are likely to occur in future.

Moral and Social Factors

However, as noted by Eadington (1996), governments faced a difficult and complex task in having to weigh economic, moral and social considerations in deciding whether, and under what conditions to legalise or to deregulate various forms of gambling. Similarly, gambling operators face decisions about balancing economic benefits against its social repercussions. Such decisions are complicated due to the fact that while the economic impact of legalised gambling are easily quantifiable, and generally perceived as positive, the related moral and social issues are more often than not difficult to measure, intangible and considered negative.

LIMITATIONS OF STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

This study is tempered with three limitations.

First, in this research, numbers gambling were arbitrarily grouped into two categories. It must be acknowledged that this approach lack specificity since there are several differences between legal and illegal numbers gambling. Given the issue of specificity has been acknowledged to be one of the factors that may weaken the relationship between the measured behavioural intention and behaviour, a more specific measurement tool should be developed via a focus group study. Second, the sample was drawn from the state of Penang alone. Hence, the results of this study may not reflect the actual situation in Malaysia as a whole. To improve the generalizability of the findings, future researchers may expand the sample size to cover other states in Malaysia. Third, since gambling is a sensitive and controversial issue, eliciting honest opinions from respondents may be difficult. Therefore, the generalizability of the conclusion must be treated with caution.

CONCLUSION

This study has demonstrated the applicability of the TRA model in explaining the choice preference of numbers gamblers by looking at the intervening variable namely intention to perform. Empirically, it was shown that the intention to select the type of numbers operator was influenced by both the attitudinal and normative components with the normative component being more influential. Detailed analysis of the salient beliefs and normative beliefs reveals that convenience and closest friend have more influence on each of the components, respectively. It has also been noted that the illegal number buyers emphasize flexible games, low price, and flexible bets whereas the legal number buyers emphasize risk, trusted operator and convenience. In the final analysis, this study has provided some useful information to marketers (and perhaps the relevant authorities) on the numbers forecasting business. However, as noted in the suggestions for future researches, it is certainly desirable that more objective information and research findings in this controversial subject be made available to the public and the government so that appropriate decisions could be made.

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